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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/574,080

03/30/2006

Takuya Tsukagoshi

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EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

02/12/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,080	Applicant(s) TSUKAGOSHI ET AL.	
	Examiner Martin J. Angebrannt	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6 and 11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The

2.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 6 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 6 and 11 need to make it clear that "the photopolymer" later in the claim(s) refers to the - - the photopolymer layer - - .

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1,2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. '193, in view of Dhar et al. '576 .

Maeda et al. '193 teaches the mixing of the holographic composition including the matrix precursor, the photopolymerizable components, the photoinitiator and the sensitizing dye (coumarin) in a glass substrate to a thickness of 10 microns, allowed to cure the matrix for 10 hours and provided with a protective layer. This was then used to record a hologram and fix the hologram (12/35-13/61). The hologram is recorded using 514 nm light due to the use of a sensitizing agent.

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Dhar et al. '576 teaches with respect to figure 5, an optical article (29), and substrates (24,26), an adhesive film (28) and photocurable composition (27) and a holders (20 and 22). The substrates are held so that their outer surfaces are parallel prior to and during curing [0041-0045]. The optical articles can be holographic recording media and the adherent to be a photopolymer and the thickness of the adherent layer is 0.2 to 2 mm. [0078-0081]. The thickness of the adherent will be different for different applications. [0070]. The adherent is at least partially cured [0048]. The adherent can be light or heat curable and may include various additives [0069-0070].

It would have been obvious to modify the process of Maeda et al. '193 by adding a photoadherent layer between the holographic recording layer and the second support as taught by Dhar et al. '576 to allow the outer surfaces of the substrate to be fixed in a parallel arrangement. The applicant points to the difference between the refractive index of the sol-gel inorganic material and the photopolymer incorporated into this in the Maeda et al. reference and states that on this basis, the limitation that the dynamic range, refractive index, photosensitivity, absorption coefficient, shrinkage factor of the photopolymer layer and the hybrid layer cannot be the same (due to the hybrid material being in one layer and not the other). This position fails to appreciate that the materials disclosed for this purpose in the specification (prepub at [0022]) refer to the Japanese patent documents which Maeda et al. '193 is the US equivalent of. (see abstract of JP 06-148880). Further the scope of difference in the "approximately the same" is not defined in the specification with sufficient specificity to exclude the differences resulting from the inorganic materials of Maeda et al. '193. The examiner holds that as some time during the curing process of the photopolymer of Dhar et al. will be partially cured and the resulting

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medium will have properties within the scope of the claims. The examiner also points out that partial curing is taught at [0048] of Dhar et al, '576.

7. Claims 1-4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. '193, in view of Dhar et al. '576, further in view of Mizutani et al. '511 .

Mizutani et al. '511 teaches a sealing agent for 10-40 micron thick holograms having a thickness of 50 microns. (example 1,11 and 5, (12/23-28)). The desire to make thinner devices is disclosed (18/29-30)

In addition to the basis above, it would have been obvious to modify the articles resulting from the combination of Maeda et al. '193, in view of Dhar et al. '576 by using thin thicknesses of the photoadherent, such as the 50 micron thicknesses taught by Mizutani et al. '511 to make the resultant articles thinner with a reasonable expectation of being able to protect the 10 micron holographic layer based upon this thickness being disclosed as suitable for 10-40 microns thicknesses.

The applicant presented no further argument regarding this rejection.

8. Claims 1-4,6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. '193, in view of Dhar et al. '576, and Mizutani et al. '511, further in view of Blum et al. '039 and Herrmann et al. '360.

Blum et al. '039 teaches the use of IR curing photosensitive materials which can be used in a variety of applications including adhesives and holograms. [0011].

Herrmann et al. '360 teaches the use of heat or photocurable adhesives with holograms [0036]. These heat or photocurable adhesives can be cured with NIR, UV or heat. [0026]

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In addition to the basis provided above, the examiner cites Blum et al. '039 and Herrmann et al. '360 and holds that it would have been obvious to modify the teachings of Maeda et al. '193 combined with Dhar et al. '576, and Mizutani et al. '511 so that the adherent/sealing agent is IR or NIR curable as taught by Blum et al. '039 and Herrmann et al. '360 based upon the language in Dhar et al. '576 describing the adherent as being curable at any wavelength which would allow partial curing without curing of the photopolymer in the matrix, which as cured by exposure at 514 nm (green) or UV radiation.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebrannndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Martin J Angebranndt
Primary Examiner
Art Unit 1795

/Martin J Angebranndt/

Primary Examiner, Art Unit 1795

2/11/09